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249 ment plantations all over India are likely to supply every possible local want.

Of the many species of chinchona the most generally cultivated is the "Chinchona Succirubra" or "Genuine Red Bark," which grows to a lofty tree and is rich in Alkaloids; but Mr. Broughton, the Government Quinologist on the Nilagiris, has lately discovered a species, which yields more than 11 per cent Alkaloids, and of these 10 per cent Quinine, the largest amount ever obtained from the Peruvian bark.

245 *Tea cultivation* has received but little attention. To judge from the experiments already made by Mr. Mann, Dr. Macpherson and Mr. Roberts, there is however no doubt, that tea will grow in Coorg.

249 *The cultivation of Sugarcane* is a purely native enterprise and chiefly in the hands of settlers from Mysore, who sell it for raw consumption or use it for the manufacture of jagry, a kind of coarse sugar. It is propagated from cuttings put down in April and yields ripe canes the year after in September. It requires a moist rich soil, that can be brought under irrigation. Some coffee planters have begun to stock their swampy ravines with sugarcane; but, the produce not being large enough, it is doubtful, whether it answers as a pecuniary speculation.

• 248 *Cotton* of a fair description has long been under cultivation to a small extent by ryots in the north-eastern parts of Coorg, where the fibre is used for home-made fabrics and the seed [137] for oil. New species: the Sea-Island, New Orleans, Egyptian and Hybrid Cotton have lately been introduced as experiments and they thrive very well, but the sudden depression in the cotton market discourages any further pursuit of the speculation.

The seed is sown in May on a well broken up rich soil, that is raised in long ridges 3 or 4 feet apart. The seedlings are sufficiently strong to withstand the heavy monsoon rains

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and the pods ripen in October or November, when the sunny weather favors the gathering; perennial plants yield however ripe cotton almost at all seasons; and the monsoon crop is of course lost. My own experience on a coffee plantation near Anandapur with all available kinds of cotton seed led me to the conclusion, that the Sea-Island and Berar-Hybrid would yield most satisfactory results. Egyptian cotton grown in 1865 by Captain Taylor on the Sampáji Ghat produced a fibre, which was pronounced by the Bombay Chamber of Commerce the best that had reached the Bombay market. 248

The Plantain (Musa paradisiaca) of which there is a wild kind in the hill-jungles, is common all over Coorg near native dwellings. The 10 to 12 feet high succulent stem consists of a number of fibrous sheaths that may be considered the continuation of the leaf-stalks and is at the base nearly one foot thick. The leaves forming a tuft on the apex of the stem are 6 or 8 feet long and 2 feet broad. In the centre of the stem is a white solid substance forming a cylinder throughout its length. It is used by the natives for curry, when broken across, it shows bundles of spiral vessels to great perfection. The continuation of this cylinder beyond the stem forms the flower-stalk, it is therefore evident that one tree can bear but once, after which it is cut down and a new shoot springs up from the root, by which means the plantain is chiefly propagated. The closely packed conical flower head is not unlike a red cabbage in appearance, and by its own weight inclines downward in a graceful curve. Each of the purple leathery leaves or involucres coated with a pale bloom of great delicacy, covers a double row of 9 or 12 elongate yellowish red flowers, extending in a spiral line over one-third of the circumference of the fleshy stalk. With the maturity of each successive row of flowers, the involucre reclines and falls off, and the fruit appears, which when ripe is from 3 to 6 inches long and from half an inch to 2 inches thick. In its spiral clustering 245 [262]

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245 round the stalk, it forms a large bunch numbering from 200
[262] to 300 plantains. The fruit when divested of its skin may be
[251] eaten raw, roasted or baked, or when sliced and dried in the sun, reduced to a kind of flour which is considered very nourishing.

The fruit is supposed to have been the forbidden fruit of Paradise, hence the botanical name of the plant. There is a great variety of plantains, which differ in size, colour and the flavour of their fruit, but all the Coorg plantains seem to be particularly rich in saccharine matter and very nutritious.

[824] The plant is highly esteemed by the natives as the emblem of plenty and fertility and is as such in constant requisition at their marriage and other festivals for ornamenting the en-
[526] trance of houses and temples. Stumps of large trunks occupy also a conspicuous place in their games and amusements, for it is considered a feat of strength to cut one through at a blow with the famous Coorg knife.

248 The *Musa textilis* or "*Manilla Hemp*" Plantain has been
139 introduced by Captain Cole, and I have successfully naturalized it in Mercara. Numbers of shoots have already been distributed for extensive cultivation for the sake of its valuable fibre for cloth and paper-manufacture. The fruit is like the common large plantain, but so full of seeds that it can hardly be eaten.

Along with this plant also *the Rheea or Assam Nettle* (Boehmeria nivea) was introduced, and having successfully reared it in Mercara, I distributed a quantity of roots and cuttings amongst the planters all over Coorg, who find it thriving very well in their sheltered ravines without any further care, but do not yet see how to make the cultivation profitable, owing to the difficulty and expense in preparing the fibre. The plant is indigenous to south-eastern Asia and is known in China as Ma or Chuma and in Assam as Rheea. It is a herbaceous plant, with large, perennial, spreading and

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much divided roots, from which rise a number of straight, slender, slightly branching stems from the bark of which the fibre is extracted. The leaves resemble those of the nettle, are light green on the surface and silvery white below but are not stinging. The male and female flowers being separate and situated on different parts of the stem, the production of seed is uncertain. 248 137

From data, given in the December number of the Calcutta Review 1854, the "Rhoea" is propagated either by dividing the roots or by cuttings. The plant is exceedingly hardy and thrives in almost any description of soil, but to have it grown to perfection, the land must be well manured and capable of irrigation. In planting a piece of ground, the roots or cuttings should be placed out in rows a foot or a foot and a half apart each way, so that the plants do not throw out too many lateral shoots which impairs the height of the stems. When once the roots have firmly struck, the plant grows vigorously, but more especially during the rainy season. The first principal shoots burst from the centre of the root, and are quickly followed by exterior ones. In two months generally may be expected, especially upon well manured land, the first cuttings, which must be taken off about one inch above the root. It is essential to mind, that the plant does not become covered with hard or woody bark, which is indicated by the former green coating turning brown, the discoloration commencing at the stem. A little browning strengthens the fibre, too much imposes additional costly labour. It requires a little experience to ascertain clearly the requisite time for cutting. There is another criterion by which the fitness of the plant for cutting may be known, by passing the hand down it from the top to the bottom; if the leaves break off crisply from where they are joined to the stem, it is a good indication that the plantation may be thinned out. If, on the contrary, the plant be not ready, the leaves, instead of breaking, tear off and strip 248

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248 the stem of the fibre. When all is ready for removing the stalks, cutting more than can be immediately attended to, should be avoided. When the sticks are cut, they should be stripped of the leaves on the ground, which is done by passing the hand down them from top to bottom, after which they are handed over to women or boys to be treated as follows:

The workers should be in couples, one to take off the bark or thin outer coat, the other to strip off the fibre. The [412] barker being provided with some coir fibre and a wooden knife, proceeds with the former to rub the stick in one direction, from top to bottom, or vice versa, which, if the plant be fresh, is easily accomplished; if the bark be obstinate, she uses the wooden knife, scraping in one direction, when the fibre is thoroughly exposed. After removing the bark, she hands the stick to another cooly, who breaks it an inch or two at either end or in the middle by which a portion of fibre is separated and which enables him to lay hold of it and to strip off very carefully the entire fibre. Should any mucilaginous matter still adhere, it is scraped off with a blunt wooden knife and the clean fibre hung up in the sun for a day to dry, when it is ready for the market. Perhaps drying the cut sticks in the sun and exposing them to the dews for several days and then beating out the brittle herbaceous part with a wooden apparatus as they treat hemp in Germany, may be a cheaper and more expeditious mode of separating the fibre.

248 As to the return, 88 lbs. are calculated upon one acre for
245 one crop, and if the field allows three annual cuttings, the
433 yield is 264 lbs. or a little more than one-tenth of a ton,
435 valued 80 rupees at £ 80 a ton, whilst an acre of coffee producing 5 cwt. would yield at 70 shillings per cwt. Rupees 175, all expenditure excluded in both cases.

245 The *Chocolate tree* or Theobroma Cacao has been successfully reared by me from seeds received from Sir Madava Row, the Devân of Travancore. The cultivation of this most use-

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244 *English Vegetables* are satisfactorily grown by Mercara
137 residents and still more so by some planters on their estates. Potatoes and Cabbage thrive remarkably well; also Peas, Beans, Knoll kohl, Salad, Beets, Turnips and Carrots of excellent quality are produced. The natives do now only attempt to cultivate these vegetables, but the markets are unsupplied with them.

244 *Native Vegetables*, which are reared on patches of paddy-fields after harvest time, or in small gardens, in the villages about Fraserpet, include: French Beans, Radishes, Pumpkins, Cucumbers, Indian Corn, Brinjals, Chillies, Coriander, Amaranthus and others, but even these are not plentiful in the Mercara market, and what there is comes chiefly from Fraserpet.

243 *Dry grain*, such as Ragy, Avary, Tavary, Huruli and others are chiefly grown in the open country of the Nanjarájpatna taluq lying along the western banks of the Kávéri. It is there also, that Tobacco is cultivated for sale, whilst in most of the Coorg farms little reserved patches of the narcotic is grown for home-consumption; but the Coorg tobacco is of an indifferent description, no particular care being bestowed upon its cultivation. The introduction of a new seed would
• [248] have a beneficial influence. A few Hemp plants are here and
[296] there grown near native houses, but more for the use of smoking the intoxicating leaves, than for the sake of the fibre.

241 Similar to other hilly parts of India, there prevails a
243 primitive mode of cultivation called "kumari," which is practised by the lowest classes of natives, the Kurumbas and Kudias, chiefly on the western slopes of the Ghats. They cut and burn a patch of jungle, and plant either the small reddish hill-rice, sown broadcast upon the slightly dug up land, or Ragy. The former yields a 10 fold, the latter a 200 to 300 fold return. Such fields are only once or twice cultivated, when they are abandoned in favour of a new piece